

Kyiv School of Economics
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Master's Thesis

**Marshrutkas in Everyday Life: Urban Mobility and Network Transformation
Under Public Service Obligations (Cases of Chernihiv, Nizhyn, Korosten)**

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ABSTRACT

This study analyzes the transformation of the role of marshrutkas in the context of the transition to the public service obligations (PSO) under EU Regulation 1370/2007.

Ethnographical research examines the transport system through the prism of the subjective experience of stakeholders. A comparative analysis based on 3 medium-sized cities: Chernihiv, Nizhyn, Korosten. Data collection was conducted through participant observation and semi-structured interviews.

The findings reveal that preserving the traditional commercial model exacerbates the urban mobility crisis. Instead, the transition to the PSO model fundamentally changes operators' motivation and decreases social inequality.

The conclusions propose a comprehensive transformation algorithm for urban transport and highlighting key barriers for the reform process. The work demonstrates that marshrutkas can be integrated into the European model of urban mobility in Ukraine.

Keywords: marshrutkas, urban mobility, Public Service Obligations, PSO, urban public transport.

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INTRODUCTION

In Ukraine, the urban public transport system relies on the phenomenon of "marshrutkas". In many cities, private carriers operate exclusively for their own benefit and depend on cash collected, which leads to social inequality and the degradation of urban mobility. Currently, citizens expect marshrutkas to serve a social function. Still, the economic burden falls on drivers, creating a vicious circle: quality declines, passengers abandon public transport in favor of private cars, and routes are shortened.

The analytical problem is that the traditional commercial model of marshrutkas deepens the urban mobility crisis. Still, the consequences of abandoning this outdated model in favor of the European system in Ukraine's medium-sized cities remain unexplored. This study shifts the focus from formalized quantitative and economic indicators to the subjective human dimension – the experience of drivers, passengers, and officials. The study will identify key problems in stakeholder interaction and the root causes of social conflicts on the roads. It becomes clear that marshrutkas are not necessarily an absolute "obstacle" for cities, thanks to the implementation of the PSO model and a change in the motivation of carriers (payment per kilometer of work, not per passenger), this type of transport can be successfully integrated into a modern, safe, and inclusive European model of urban mobility.

For the study a qualitative approach was chosen based on urban ethnography and phenomenological theory. Three medium-sized cities were selected for comparative analysis: Chernihiv (as an example of the successful implementation of the PSO model), Nizhyn, and Korosten (where the traditional competitive system still operates).

Most previous studies of the marshrutkas phenomenon focused on the experience of Central Asian and Caucasian countries or considered exclusively economic aspects. The novelty of this study lies in its systematic examination of the feasibility of transitioning to the European PSO model in the Ukrainian context, through the prism of stakeholders' subjective experience. This is the first study to combine analyses of infrastructure solutions, the regulatory framework of European integration, and the ethnographic dimension of everyday transport practices to propose a comprehensive transformation algorithm.

The structure of the work includes an introduction, a glossary of key terms, a literature review, a description of the analytical framework and methodology, a section with results, conclusions, sources, and appendices. The results section is central and

logically divided into four blocks: 1) analysis of the regulatory framework of Ukraine compared to the EU; 2) approaches to transport policies in selected cities; 3) financing and control procedures; 4) social impact of the transport system on the daily life of drivers and passengers.

TERMINOLOGY DICTIONARY

An electronic ticket is a travel document of a prescribed form, which, after registration in an automated fare accounting system, entitles the passenger to receive transport services (Про автомобільний транспорт, 2018).

Automated fare accounting system (AFAS) is a technical solution that ensures the interoperability of electronic ticket registration tools that grant the right to receive transport services to privileged categories of citizens. Local governments establish the procedure for the functioning of AFAS and determine the person authorized to collect payment for transport services in the event of its introduction and the organization of passenger transportation on urban, suburban and intercity bus routes for public use and on urban electric transport routes by business entities designated by customers, AFAS performers (Про затвердження Технічних вимог до автоматизованих систем обліку оплати проїзду, 2025).

Marshrutka – the same as Route Taxi (Горюх, 2026).

Public service obligations (PSO) means a requirement defined or determined by a competent authority in order to ensure public passenger transport services in the general interest that an operator, if it were considering its own commercial interests, would not assume or would not assume to the same extent or under the same conditions without reward (Regulation - 1370/2007 - EN - EUR-Lex, 2017).

Rolling stock – one or more tram cars or trolleybuses. Tram cars, trolleybuses, subway cars (Про затвердження Правил охорони праці на міському електричному транспорті, 2026). Passenger rolling stock includes buses, cars, passenger trailers and semi-trailers (Буренніков Ю.А et al., 2018).

Route Taxi mode – transportation of passengers on a city or suburban public bus route according to a schedule that determines the departure time of buses from the starting and ending points of the route with disembarkation and boarding of passengers or citizens at their request along the route of the bus in places where this is not prohibited by traffic rules (Про автомобільний транспорт, 2018).

Route vehicles (public transport vehicles) – buses, minibuses, trolleybuses, trams and taxis that travel along established routes and have designated places on the road for boarding (disembarking) passengers (ПДР України, 2019, 1.10).

Urban public transport – public urban transport: bus, metro, tram and trolleybus, operating on specific routes, according to established timetables and fares (Про затвердження Інструкції про порядок обліку разових квитків на проїзд, 2026).

LITERATURE REVIEW

Urban public transport is a complex mobility ecosystem that encompasses various types of rolling stock: buses, metros, trams, and trolleybuses that usually operate according to established routes, schedules, and fares. However, amid this diversity, a specific and deeply rooted phenomenon stands out.

Minibusses, or more commonly known to Ukrainian speakers as marshrutkas ("маршрутки"), are not a phenomenon unique to Ukraine specifically. This type of public transport exists in various forms across post-Soviet countries: Armenia (Madgwick, 2019), Georgia (Ciosk, 2017), Tajikistan (Tajikistan: Dushanbe EcoMobility Project, 2026), Kyrgyzstan (Kyrgyzstan, 2025), etc. With other names but with the same concept of urban mobility solution, marshrutkas function in Turkey, where they are called "dolmuş" (Dolmuş, 2025). In African countries, this type of transport also exists: in Kenya, mini buses called "matatu" (Matatu, 2022), in Nigeria, there are "danfo" (Danfo, 2026), and in South Africa, they are called just "minibusses" or "shared taxis" (Taxi Wars in South Africa, 2021). Minibusses are also known to Vietnamese citizens, and even throughout Latin America, for example, "colectivo" in Argentina or "pesero" in Mexico. But the focus of this study is Ukraine, and the literature base considers the experiences of countries geographically close to it.

The studies on urban mobility on which the study is based, and which will be listed below, cover a wide range of topics: from informal transport networks (marshrutkas routes) in the post-Soviet space (Sgibnev & Rekhviashvili, 2020), to institutional reforms (Нагорний, 2017) and the implementation of innovations (Barthelmes, 2024). The issues of optimizing urban transport and transitioning to an electronic passenger registration system and cashless payments are also widely covered in the scientific literature. However, in these works, the economic assessment of efficiency and other quantitatively measured indicators is prioritized.

Much of the existing literature on the marshrutka phenomenon is primarily authored by a specific group of researchers who participated in projects of the Leibniz Institute for Regional Geography (IfL) in Leipzig (About IfL, 2026). The institute's projects focus on the study of social processes from a geographical and local perspective, including urban mobility. Most of the research conducted for the Leipzig Institute focuses on the experiences of Eastern Europe and Central Asia. The group of authors is led by the Senior Researcher for Mobility Projects, Dr. Wladimir Sgibnev (Sgibnev, Wladimir, 2026).

In 2016 W. Sgibnev and A. Vozyanov (Sgibnev & Vozyanov, 2016) took a four-week period of exploratory fieldwork in Khujand, in northern Tajikistan. They shared conceptual, historical and socio-economic cornerstones of the marshrutka mobility phenomenon in the chosen region and concluded that marshrutkas, along with other types of public transport, responded to passenger demand but were also codependent on state ideology and future policies.

Next, in 2018, W. Sgibnev, together with Rekhviashvili, decided to compare proper taxi service (Uber) and route taxis (marshrutkas) as urban mobility solutions in Tbilisi, Georgia (Rekhviashvili & Sgibnev, 2018). Through their research, authors highlight the importance of public transport but also look from the passenger security perspective and workers' protection in the sphere. As the study showed, the transportation sector in Bishkek remained informal and largely unregulated by the state. Authors provided trends that the Georgian marshrutkas suffer from a lack of state regulation and vertical integration. Moreover they (self-)exploitation of drivers and the pursuit of earnings provoke dangerous driving and a high accident rate, and the chaotic use of marshrutkas instead of a coordinated system only exacerbates traffic jams and air pollution.

In 2020, the same group of authors continued their study of the Tbilisi experience with marshrutkas, focusing on digitalization and its impact on social justice. And as a result, they came to an unexpected conclusion (Sgibnev & Rekhviashvili, 2020, p. 350): digitalization, despite transparency in economic conditions, can increase injustice towards drivers and entrepreneurs. The authors do not deny the importance of transparency in the operating system, but emphasize that it is necessary to consider trade-offs and externalities.

Meanwhile Ukrainian researchers of public transport either ignore marshrutkas entirely or view them as a subspecies of bus service, devoid of independence and presented exclusively in a negative context (Vozyanov, 2015; Нестеренко, 2019; Машкевич, 2019). So they reveal two dominant patterns regarding marshrutka's analysis.

Thus, the first group includes textbooks by a group of authors led by Nesterenko G.I. Their works are designed for modern transport specialists, but, in terms of content, they pay very little attention to public transport and to organizational measures to ensure high-quality communication within cities. Instead, much attention is paid to the geographical and economic aspects of transport networks, but not to ensuring transparency and quality of service provision for the population (Нестеренко, 2019, pp. 103-117).

The leading study on which the arguments of the second group are based is the doctoral dissertation by Mashkevych S.V. The author provides a comprehensive historical background to marshrutkas in Ukraine but considers them not as an independent phenomenon but only as a subspecies of buses. This is one of the few in-depth studies of Ukrainian marshrutkas, which describes the formation of this type of public transport.

"Marshrutkas appeared en masse in post-Soviet cities in the early 1990s as a reaction to the economic crisis, fuel shortages and the decline of traditional state public transport. The decline of the urban transport system is one of the important factors why marshrutkas had a chance to succeed even during the soviet era. And this was a way for private entrepreneurs to make money. In fact, they profited from others due to gaps in the functioning of public transport" (Машкевич, 2019, p. 362).

Mashkevych also points out that the fare was immediately 2 times higher than in public transport, there were no benefits, and drivers could also skip certain stops if there was no passenger flow at them (Машкевич, 2019).

Since the demand for marshrutkas was (and still is) significant, it is possible to say that marshrutkas helped overcome the acute crisis of urban transport in the 90s: they covered part of the transport services market. But as Mashkevych notes:

«At the same time, private carriers attracted a significant part of solvent passengers, thus complicating the already difficult situation of standard transport. Competing with the latter, marshrutka drivers often resorted to dishonest measures. One of these: knowing the schedule, setting off on the route from the final stop a minute or two earlier than a trolleybus or bus, and picking up a significant number of passengers at intermediate stops, forcing urban transport to "carry the air"» (Машкевич, 2019, pp. 328-329).

However, a similar practice still exists in many Ukrainian cities where marshrutkas developed alongside and in competition with municipal transit, leading to a fundamentally different dynamic in the evolution of the transportation system (Vozyanov, 2015).

A popular thesis among Ukrainian public transport researchers for improving service quality ultimately leads only to minimizing competition between private and municipal carriers for passengers. Thus, T. Nagorny points out that it is necessary to draw on the experience of other countries:

"It is necessary to return to a centralized system of public transport management, and first of all, to establish regular operation of main routes, eliminating chaotic competition for passengers on them. In progressive cities, such as London, Prague, Warsaw, Krakow, a scheme of cooperation between the city and private carriers based on franchising has been implemented" (Нагорний, 2017).

At the same time, it indicates the principle of franchising, but does not reveal the meaning of this concept.

This view fails to take into account that marshrutkas are the part of a system that suffers from incompetent management: the state and society expect marshrutkas to perform the social function of public transport (for example, transporting beneficiaries), but the economic burden falls entirely on the drivers of the vehicles, since the business must bring in money. In Ukraine, during the 2000s, this led to acute ethical and social conflicts between drivers and the elderly (in particular, "children of war"), whom drivers often ignored at bus stops due to the lack of adequate state compensation (Vozyanov, 2015).

This system has led to a vicious circle with no prospects for municipal public transport: fewer passengers use it, profitability is declining, the number of rolling stock releases is decreasing, and the most unprofitable (but often socially important) routes are being closed.

And in the fight for passengers, who were forced to pay several times higher prices for travel both directly and indirectly, competition among private carriers was also growing. But not very fair, since transportation by marshrutkas was often not legally regulated, did not comply with technical standards and safety rules, and, in fact, did not provide passengers with a guarantee. Yet, the carriers were not prosecuted by law enforcement agencies. All because of the high level of corruption and the huge flows of untaxed cash.

At the same time, analysts from the NGO Vision Zero sought to raise awareness of the need to reform public transport and to formulate recommendations for the national level (Vision Zero, 2024a; Vision Zero, 2024b). In their research, they focused on analyzing the legislative framework and the current state of transport networks in these areas. Subsequently, colleagues from the NGO Ecoaction continued their predecessors' work on legislation and also compared the systems with those of European countries (Екодія, 2025).

So, among research on marshrutkas, the work of Leibniz Institute for Regional Geography dominates, focusing mainly on experience in Central Asia and treating

marshrutkas only as an element of mobility. At the same time, it is clear that modern views of Ukrainian researchers on marshrutkas are largely negative, or do not even consider them a full-fledged form of public transport.

This research aims to examine how marshrutkas are assessed across different cities in Ukraine, and whether the marshrutkas system can be transformed and structurally regulated if this issue is approached comprehensively at different levels of government.

ANALYTICAL FRAMEWORK

The term "marshrutka" does not exist in Ukrainian legislation; however, in the general sense, the word "marshrutka" refers to a bus that is privately owned and carries out passenger transportation in the minibuss mode for commercial purposes.

There is a conceptual contrast between the commercial approach and public service obligation (hereinafter referred to as "PSO"): the marshrutka by private operators is driven exclusively by its own commercial interests, while the PSO system defines the operator's work as he would not have taken in the same volume or on such terms without appropriate remuneration from the authorities (Regulation - 1370/2007 - EN - EUR-Lex, 2017).

What remains unexplored and warrants designation as a **research gap** is the impact of abandoning the traditional minibuss model on the public transport systems of medium-sized Ukrainian cities, especially under martial law.

Only a small number of works mentioned in the previous section consider the transition to the principle of public service obligations and the introduction of payment per kilometer of transport work through the prism of the subjective experience of key stakeholders. This is either analytical work on the legislative framework (Vision Zero, 2024b) or an analysis of the experience of European states (Ecoaction, 2025).

In addition, the reasons for resistance to reforms among high-ranking officials and carriers, and the impact of military challenges, remain insufficiently studied. In addition, marshrutkas are defined by the Ukrainian scientific community exclusively in a negative light. Thus, this study aims to contribute to the scientific base by filling these gaps through a comparative analysis of the experience of Ukrainian cities with different models and approaches to public transport management.

Under the European model, municipal authorities mandate clear social criteria, such as minimum working standards, passenger and employee safety, and strong social protection. The legacy marshrutka system operates on a fundamentally different model, often relying on social dumping to remain financially viable.

Main research question: How does the interface between marshrutkas and the broader urban transport system shape the daily mobility experiences of citizens?

Given that urban mobility intersects with multiple aspects of city life, this study introduces **additional questions** to support the primary research question. The first focuses on citizens' everyday practices, capturing the human perspective on urban interaction. The second addresses current socio-economic challenges, illustrating how they shape and define the transport system.

For the comparative analysis, a sample of three cities was selected, each performing its own analytical function in the study. Chernihiv is a regional center with around 280 thousand people (ДССУ, 2022) and acts as a best practice - it is the only city in Ukraine that has practically implemented the transition to a new management model and adapted the system to European standards (the principle of public service obligation is implemented).

In contrast, Nizhyn and Korosten are representative models of non-regional centers with populations of 50-60 thousand people (ДССУ, 2022), where a traditional competitive system operates, focusing on marshrutkas. Thus, these cities allow us to extrapolate the results to most Ukrainian cities of a similar scale, since they reflect typical building density, have regulatory obligations to create sustainable urban mobility plans (Про схвалення Національної транспортної стратегії України на період до 2030 року, 2024), and are characterized by high pendulum migration towards the capital.

METHODOLOGY

The research draws on a qualitative urban ethnographic approach. This allows us to explore the meaning of public transport from an anthropological perspective, with an emphasis on studying informal rules and the subjective experiences of key stakeholders – drivers, passengers, and officials.

As a preparatory stage the **desk research** was conducted. This work includes an analysis of the regulatory framework, route network research, and transport typology in selected cities.

The reform of public transport and the implementation of the PSO model are part of the Association Agreement between Ukraine and the EU (Association Agreement, 2014) and constitute a binding obligation of our state. This process requires the full implementation of Regulation (EC) No. 1370/2007, which is also recorded in the National Transport Strategy until 2030 and the National Program for the Adaptation of Ukrainian Legislation to the Law of the European Union (Про затвердження Національної програми адаптації законодавства України до права Європейського Союзу (Acquis EC), 2026).

It is important to understand the main legislative framework and to define the core parameters of a public service obligation reform within the framework of Regulation (EC) No 1370/2007. The aim is to create a safe and efficient transport network that takes into account citizens' interests and the principles of the free market. Such a goal can be achieved by introducing several changes.

Firstly, it introduces the phenomenon of a socially important service, within the framework of which carriers have the right to claim compensation from the state for operating unprofitable routes from a business point of view. At the same time public service obligations set the conditions and rules under which authorities can pay financial compensation to operators or grant them exclusive rights in exchange for fulfilling socially important obligations.

In addition, attention is paid to ensuring transparency and controlled competition to improve the quality of services. The regulation details the procedures for concluding contracts, their terms of validity, and mechanisms for protecting employees' rights when changing carriers. Therefore, to assess the feasibility of this reform in Ukraine and determine the necessary implementation steps, it is essential to set a baseline understanding of how cities currently manage and operate their transport networks.

Another part of this method is proofreading reports and familiarizing oneself with the publications that add context, supported by official data. Despite its absence from Ukrainian legal and linguistic dictionaries, the term "marshrutka" is a universally recognized transit phenomenon. Often in literature or (in)formal communication, the word "marshrutka" might be used to indicate a small-capacity minibus, which usually belongs to a private operator. However, if this type of operator uses large-capacity buses, they are called an "autobus". In Ukraine, marshrutkas also have dialectal names, such as "luhari" (лухари) in Kremenchuk (Ветерани космічних військ, 2025). To clearly define its scope for this study, a marshrutka is defined as a privately owned bus engaged in commercial passenger transportation under the route-taxi operational model.

Such work provides a reliable theoretical basis for understanding the system's functioning, at least in accordance with legislative requirements. Further research is organized according to the core operational areas around the specific dimensions of the public service obligations framework.

Fieldwork was conducted by using an ethnographic method, which allowed for capturing the construction of feelings about places based on the experiences of people who live there by collecting diverse experiences that form a set of perspectives, thereby providing a means to obtain empirical knowledge.

The value of urban ethnography in describing the experience of urban populations "from the perspective of the inhabitants" (Imilan & Márquez, 2019, p. 1), and distinguishing this experience from others.

The goal of the empirical part of the research is to learn the opinions and experiences of different categories of the population involved in public transport (drivers, passengers, government representatives) to build context. That's why this part of the research is based on qualitative methods. Such an approach allows a deeper dive into the anthropological significance of public transport, including marshrutkas, in the life of the city. In addition, a qualitative approach allows for the identification of informal rules or the recording of behaviors that respondents do not deem worthy of attention. And importantly, this approach is more flexible in processing respondents' answers and in integrating observations layered with acquired experience.

I conducted participant observations of people's behavior at stops, transport hubs, and traffic jams without interfering with the process, and through my trips on local public transport (trolleybuses and marshrutkas). The participant observations took place in each of the selected cities according to the same schedule: I chose one weekday, and for 3–4 hours between 11:00 and 14:00, I walked through the streets with public transport, waited at stops, and observed how queues are shaping, and

traveled with other passengers on local public transport, which ensured uniformity in the research conditions.

I analyzed, in particular, the queue culture and visually assessed the condition of vehicles. Such observations allow one to delve into the issue and experience firsthand what it is like to ride a marshrutka, bus, or trolleybus. This approach allows for a deeper understanding of public transport, which serves not only to move passengers but also to foster social interaction. Also, field trips can help better document daily practices and potential conflicts. Having noticed certain patterns in excluded observations, it is possible to better understand the context and conditions, and to focus on what is common and what is different.

As a part of ethnographic research, I **talk informally** with people in the chosen cities. In total, during this research, more than 50 people were interviewed who are in some way engaged in the transport topic. I prepared open-ended questions in advance, which helped me collect detailed opinions from a wider range of people than interviews could have in a given unit of time. Taking into account drivers' pauses between trips and passengers waiting at the stop, I identified up to 3 key topics I wanted answers to, and the further direction of the conversation depended on the completeness of the answers and the willingness to continue the conversation with me. So as a result, my sample of respondents involved in such informal conversations can be structured as follows:

1. Employees of private and municipal transport enterprises who are currently working on the routes. Among the respondents were marshrutka drivers, bus drivers, trolleybus drivers, and conductors. It was important to hear from public transport drivers about their professional experience, impressions of working conditions, interaction between different carriers, satisfaction with the rolling stock, and attitude to changes and conflicts on the road (12 people).
2. Conductors may share observations on working conditions and changes in passenger behavior (3 people).
3. Passengers (of different age categories and genders) who evaluate comfort, adherence to schedules, driving safety, and convenience of the route network (22 people).
4. Car drivers were also in the spotlight, as their responses about choosing a personal car over public transport could suggest ways to change this behavior (8 people).

In addition to the observations, **semi-structured interviews** with civil servants and transport specialists provided an opportunity to obtain non-obvious data and additional context beyond reports or media coverage. In total, 6 separate interviews were conducted. For these interviews, I mainly focused on local government representatives

and transport organizers, as they can provide information on the regulatory framework, budgeting, and strategic vision. They are also often the ones who make decisions and organize the work.

The questions were formatted and adapted based on the position of the person I arranged a meeting with. The AI tool (Gemini) was used to format questions into neutral form, without a clear understanding for respondents of which answers are welcome. The questions to specialists in the offices were more focused on process organization, communication, data processing, potential procedural challenges, and barriers (a questionnaire with general questions is provided in Annex 1). Chosen participants are specialists in transport enterprises in cities, often heads of municipal institutions, who are civil servants responsible for the proper functioning of transport in cities. While the urbanists with whom I had conversations may not be related to the work in the analyzed cities, they have expertise in the field from experience of interaction at the national and/or local levels. And their opinions from the outside are important for processing the data, given their richer work experience and impartiality.

In collecting and processing the data, I used some analytical techniques. First of all, notes and recordings were taken in parallel: in written form in a notebook (already corrected) and by recording on a dictaphone. After that, the dictaphone recordings were edited to exclude sensitive information and provide anonymity. The next step was to decode and transcribe the edited voice recordings into text using artificial intelligence (Gemini). After the preparation stage, the work consisted of identifying strong and important theses. These steps enabled distinguishing recurring themes, behavioral patterns, and other similar markers. Such steps were followed by a comparative analysis of data from scientific and other open sources with the actual situation, based on respondents' answers and personal observations. Separately, a comparison was also made between what transport specialists say in their offices and the actual responses of people on the ground. And the final steps were coding and organizing the text into segments to isolate keywords, and grouping and consolidating abstracts by thematic mentions.

Limitations of the study include the conditions of martial law, since the presence/absence of air alarm, proximity to the frontline, and previous attacks by Russia affect people's trust in strangers and their willingness to answer questions. In addition, this condition also affects the researcher's internal confidence during observations, note-taking, and street photography.

Also, note that only 3 cities were selected from 1469 communities, so the study's results will not be representative of the whole of Ukraine. While not fully representative, this study captures the core trends, tensions, and barriers to implementing the PSO model. The data obtained do not allow us to understand the full

picture, the motivation, or the rules. There is also no feedback, which complicates data interpretation. Furthermore, the field research in each city was conducted for a limited number of hours on one of the weekdays. This affects the completeness and exhaustiveness of the data, but the information obtained is a significant basic component for further research. Although the sample does not cover a large number of communities, it still allows us to understand and describe trends. The experiences of other communities were mentioned in the stories of experts, which indirectly increases the number of communities considered in the study. Thus, the study does not generalize from the experience of all of Ukraine but describes key phenomena and experiences in cities.

Given the difficulty of controlling the sample, attention was focused on those who were ready to talk here and now. In addition, the time for questions was limited by drivers' working hours on flights and by passengers waiting for public transport. As in semi-structured interviews, in live surveys, gender, appearance, and communication style affect respondents' openness and willingness to share information.

Interviewer subjectivity and subconscious bias in the direction of the conversation in a way that is beneficial to the research to find confirmation of hypotheses. In addition, the interviewer's gender, age, communication style, and prior knowledge may influence the communication format and respondents' willingness to open up. There is also a possibility that respondents may give answers that seem more correct or safe to them, given their position.

The weather and temperature varied from day to day, which affected people's openness and willingness to communicate. In addition, the sample is not diverse, which affects the representativeness and analysis of behavior across different population categories.

The methods of data collection and analysis are selected with the principle of data triangulation in mind. That is, it is the use in one study of both existing statistical data and obtaining new data through surveys, as well as the analysis of media and other sources of information (Jaffe & A. de Koning, 2015). Thereby ensuring the validity, reliability, and correct interpretation of the data obtained from conversations, observations, and other processed information from various sources.

Ethical problems

In my approach to work, data collection, and processing, I adhered to the AICP Code of Ethics and Professional Conduct (American Planning Association, 2021). In accordance with it, I identified several weaknesses that need to be addressed to ensure anonymity and prevent possible consequences for respondents.

One of the main ethical problems in the study is respondents' fear of providing data. In this case, to minimize impact, a clear algorithm will be used: an introduction; an explanation of the study's purpose; obtaining verbal consent from participants before the interview; voluntary participation; and anonymity. In general, maintaining politeness in communication, even when refusing, is important for the representation of the educational institution and the student community. Voice recordings are made only with people's permission and stored in a cloud storage with two-factor authentication. These are already processed recordings without any sensitive information and names. While municipal representatives consented to the public disclosure of their insights, their identities and official titles have been anonymized. This measure was taken to ensure participant safety and to mitigate potential professional or personal repercussions.

Another potential negative impact is the deanonymization of respondents due to a small sample size. In this case, the study will ensure confidentiality and use generalized wording for positions. In addition, the attached photos were used without the respondents' faces.

An equally important challenge may be the researcher's commitment to a particular phenomenon during the research process. It is to prevent this that various methods are used in the study, including communication with different stakeholder groups.

FINDINGS

As a result of the research, I analyzed the legislative norms and, based on them, identified key factors that will affect changes for Ukrainian cities. In general, they can be divided into perspectives on organizing work, calculating economic indicators, and improving the social component.

1. Normative framework of the EU and Ukraine.

To address systemic problems of unprofitability, low quality of services, and corruption risks, Ukrainian researchers emphasize the need to transition to the European model of Public Service Obligations (PSO) (Vision Zero, 2024a). In accordance with EU Regulation 1370/2007 (Regulation - 1370/2007 - EN - EUR-Lex, 2017), this model fundamentally changes the paradigm: the authorities and carriers conclude contracts under which the authorities pay for the transport work performed and compensate for the lost revenue, guaranteeing the carrier a "reasonable profit" regardless of the amount of revenue collected (Regulation - 1370/2007 - EN - EUR-Lex, 2017). This approach allows for loss-free service during off-peak hours, connecting remote areas, and ensuring inclusiveness. According to the model, the carrier is not interested in extracting cash, but in adhering to the schedule, which eliminates competition for each passenger and increases traffic safety.

Although the regulation itself is small in scope and consists of 12 articles, it comprehensively describes key procedures, legal obligations, and algorithms. In addition to the key mechanism for compensating carriers for the work performed, the Regulation defines key terms and concepts, contract requirements, general rules of the transportation market, and the scope of application (Regulation - 1370/2007 - EN - EUR-Lex, 2017).

Moreover, it is also important to examine Ukraine's legislative framework to identify the areas that will require significant changes. Additionally, it will also be helpful to understand the experience of other countries that have previously implemented this principle.

1.1. Ukrainian legislation.

The legislative basis for the reform is provided by the Law of Ukraine "On Road Transport" (Про автомобільний транспорт, 2018) and theses on the development of urban public transport, which are specified in the National Transport Strategy of Ukraine until 2030 (Про схвалення Національної транспортної стратегії України на період до 2030 року, 2024). The system fully complies with the four Altmark criteria: the enterprise must fulfill its obligations to serve the population,

compensation must be transparent and not exceed costs, and the business entity must be selected through a public procurement procedure (AMKY, 2024). These conditions legalize budget compensation, eliminating the risks of accusations of illegal state aid. From an economic point of view, passenger transportation is not considered a process of collecting payment for each transported passenger, but rather the production of a product, with the unit being one kilometer of mileage. This approach allows for a clear calculation of service costs and the establishment of a transparent calculation tariff, which serves as the basis for further analysis of economic efficiency.

Work on this began back in 2021, when a draft law from the Government (No. 4583) was registered, as well as a package developed by deputies (main draft No. 5149 and four amendments to it: No. 5150, No. 5151, No. 5152, No. 5185) (Vizion Zero, 2024b). These laws were supposed to replace the opaque competitive system of selecting carriers with tender procurement.

Since 2021, work on this issue has faded and resumed in 2024, when the Ministry of Development chose not to finalize existing draft laws, but to develop a new one (Пріоритети законодавчої роботи у сфері автомобільного транспорту та перевезень на 2026 рік, 2026). In 2025, NGO Ecoaction, together with NGO Transport and Environment, developed and distributed to the Ministry of Development recommendations on the harmonization of Ukrainian legislation in the field of socially important services (Екодія, 2025). But still, as of May 2026, the new document has not been registered, and the text has not been made public.

The implementation of PSO has a great public importance and work on this has been included in Section 8 of the National Programme for the Adaptation of Ukrainian Legislation to the Law of the European Union (Про затвердження Національної програми адаптації законодавства України до права Європейського Союзу (Acquis ЄС), 2026). Since the Regulation affects rail and road transport, the deadline for implementation is October 2027.

However, at the beginning of 2026, work resumed on draft law 5651-2, which was submitted by the Government in 2021, regulates the issue of fares and benefits, is one of the preparatory steps for the reform of socially important transportation, and is currently recommended by the relevant committee of the Verkhovna Rada for adoption (Картка законопроєкту - Законотворчість, 2021).

In the dissertation on the formation of transport networks in various cities of Ukraine, researcher T. Nagorny studies, among others, the example of Chernihiv. He notes that as of the end of 2022, the city's public transport network needs significant updates and

improvements (Нагорний, 2025, p. 175). However, in his proposals, he operates from a period when Chernihiv had just begun a comprehensive transition from a competitive basis to the formation of work in accordance with socially important transportation. So if we compare the data obtained and analyzed by Nagorny at the beginning of the full-scale invasion and the work done within the framework of this study, it may be that many aspects have managed to change, and in many cases they are in favor of improving the quality of service, which will be discussed in the following parts. Similar theses, but without mentioning the European model, are also voiced by urbanist Ivanna Maliy. In her video study, she analyzes the example of Kyiv, but her recommendations are mostly universal and related to European regulation:

"Competition with clear criteria. Electronic transfer ticket. Redistribution of money within the city" (Іванна Малій, 2026).

Thus, it becomes clear that the reform of public transport is long overdue. And the solution may be a transformation in accordance with the PSO. Although a comprehensive reform of national legislation on PSO introduction is still being worked out, the current regulatory framework (in particular the Altmarm criteria) already allows individual cities (such as Chernihiv) to legally subsidize carriers in line with the European model, enabling transport reform at the local level.

1.2. International perspective.

To determine whether there is a way out of the vicious circle, it is important to examine the experience of European Union countries, especially those that have a similar past to Ukraine and have already integrated public service obligations into their transport systems.

And one of these countries is Latvia. The first private passenger transport companies in Riga began operating in 1992. During the active operation of the *marshrutkas*, general dissatisfaction also grew. Passengers complained about the quality of transportation, and companies could not compete with often dumping tariffs, manipulation with passenger counters, and non-operation at unpopular hours – early in the morning or after 9 p.m. (Elmārs Barkāns, 2022). In Riga, until 2015, private companies illegally transported passengers, causing losses to the local transport company until the management changed and reforms were initiated. And in addition to legislative regulation and deterrence of private carriers, work was carried out to strengthen the position of municipal public transport in Riga. This was also influenced by EU Directive No. 1370/2007, which defines the rules for public transport of public importance and also establishes clear competitive conditions.

To begin with, all carriers were required to re-sign license agreements, in which the Riga Municipality itself determined the routes to be covered, traffic frequency, rolling stock quality, etc. The directive also states that unprofitable routes served by a private carrier can be covered from the local budget.

From 2015 to 2022, municipal transport only strengthened its position in the eyes of city residents. In comparison, marshrutkas were used on public-interest routes. However, marshrutkas were not ideal. One of the news items begins like this:

"Since the end of August, Riga residents have increasingly expressed indignation at the chaotic movement of marshrutkas in the capital, or rather, its absence. Several flights have been cancelled in a row, and people are stuck at bus stops, not knowing when and whether they will reach their destination" (Elmārs Barkāns, 2022)

A situation that is very familiar to Kyiv residents. But the Riga authorities decided to completely stop cooperation with the carrier and published a corresponding statement. At the same time, transport specialists immediately began to adapt the routes so that passengers would have as few inconveniences as possible:

"Passengers will be able to use one of the existing bus, trolleybus or tram routes. In turn, for unique connections that are currently not provided by Rīgas satiksme (the city's transport company), solutions will be developed for their integration into the Rīgas satiksme route network" (Elmārs Barkāns, 2022).

Since Ukraine is not yet a member state of the European Union, in the context of marshrutkas, it is worth looking at the experience of another country with candidate status and a Soviet past: Georgia.

What is interesting about their experience is that, until 2010, most of their passenger routes were served by marshrutkas, which were on average more than 20 years old. And these were, among others, Bogdan brand cars. But the readiness for reform, the attraction of funds from the Asian Development Bank, and the skillful investment of the funds received allowed the creation of an interesting mixed system, in which the city's bus transportation is completely entrusted to a private carrier.

A study commissioned by the Asian Development Bank states:

"In the former Soviet Union, and in the early years of independent Georgia, the normal method of public transport payment was to pay for each journey separately without any transfer facility being available. Therefore, the network that resulted comprised many direct routes as required; individually each route operated infrequently" (MacDonald, 2017, p. 35).

From this information it is already clear that there are also gaps in the public transport system in Tbilisi. And that here too the citizens paid for the mistakes of the local authorities.

A local resource for those who want to visit Tbilisi has an article about different types of transport in the Georgian capital. It talks about marshrutkas, as well as reforms that have taken place in recent years.

"Old, fuel-inefficient yellow marshrutkas have been replaced by new, larger green and blue buses and marshrutkas, with lines running along most streets, making them both more comfortable and convenient. Due to the newly renovated bus lanes in Tbilisi, taking the bus is sometimes even faster than using a private car. As mentioned, Tbilisi just finished upgrading both their fleet of buses and their bus lane infrastructure in the city centre, creating a comfortable and efficient experience for riders" (Williams, 2021).

But now the carriers have the same conditions, are selected competitively, and meet certain requirements and criteria. In fact, all this meets the requirements of the EU Directive 1370/2007, as mentioned above.

User experience studies, including a study of the mobility of older people in Vietnam (Hanoi), confirm that free travel policies alone are not enough to encourage the use of public transport. Latent variables — such as feelings of safety (risk of accidents), security (fear of crime), staff friendliness, ease of navigation, and overall reliability — are critical to passengers. Without comprehensive improvements in these standards, public transport will not be able to become an alternative to private cars (Nguyen et al., 2026).

Thus, the PSO affects not only the direct mobility of the population but also helps address problems related to social conflicts. The experience of countries with a similar past (Latvia, Georgia) may be used as a guide and proves that marshrutkas can be successfully integrated into a modern public transport system. Even if there was fierce competition before, transparent contracts, exclusive rights, and the political will of local authorities are enough even at the current stage to improve transport networks.

2. The architecture of transport policy.

Knowing approaches to shaping transport policy in cities relies on structured management, clear regulatory rules, and an understanding of how the network functions. This information serves as key indicators of institutional professionalism and a municipality's readiness to actively govern and transform the system.

2.1. Approach to organizing transport work.

According to the EU Regulation (EUR-Lex, 2017), a local authority may choose to provide the transport services itself or award the public service contract directly to a legally distinct "internal operator" over which it exercises control. To ensure a level playing field, this internal operator is strictly controlled and is generally prohibited from participating in competitive tenders for transport services outside the territory of its controlling authority. If the authority opts to entrust the services to a third party, it must generally award the contract through a fair, transparent, and non-discriminatory competitive tendering procedure that is open to all operators.

Thus, the PSO simultaneously stimulates carriers to operate routes, provides protection against competition, and establishes criteria to improve the quality of service for passengers.

Now, take a look at how public transport currently works in Ukrainian cities.

Nizhyn operates according to a classic scheme for Ukrainian cities: carriers are selected only on a competitive basis. However, an interesting feature in Nizhyn is that during martial law, carriers refuse to automatically extend contracts, insisting on holding new competitions. This is due to fears about the wording "until the end of martial law": without a clear time limit, current players worry that after the war, large external players will enter the market, with whom local companies will not be able to compete. Therefore, they choose a clear option with clear terms of validity.

The city also uses a package approach ("voluntary-compulsory") to select routes for which a competition is announced. A carrier that receives a profitable central route (for example, No. 39) is obliged to also serve unprofitable long-distance routes determined by the city (for example, No. 5, No. 11, No. 13). However, this is not announced to the participating companies.

To balance the transit network, **Korosten** combines its routes into "packages" before bidding. This strategy combines high-profit short routes that pass through densely built-up residential areas (such as No. 1, 2, and 7) with longer, less profitable lines that serve remote areas with single-family homes (such as No. 5). Currently, these

high-density short routes generate the most revenue. In contrast, Route No. 8, which serves the private residential sector, remains the least popular.

At the same time, unlike Nizhyn, Korosten carriers, on the contrary, supported the extension of current contracts, so the municipality, even if it wanted to, cannot terminate the competitions, the effect of which fell on the time before and during the full-scale invasion. Therefore, until the end of martial law, the city maintains the existing work model, focusing on maintaining the stability and accessibility of transportation:

"I think that in the new competition we will foresee a lot of this. The main thing is that the war ends. Then we will work on development and restoration,"
- says a specialist from the Korosten City Council.

The biggest and most striking change in the approach to the city's transport system took place in **Chernihiv**. Since 2022, the city has been operating a system based on the principle of PSO: the city compensates for the costs of transporting socially vulnerable categories of the population.

In Chernihiv, both municipal and private companies operate, but according to the regulations, they have exclusive rights to the routes they have chosen. But the city also sets high criteria for the suitability of work for these carriers.

Therefore, smaller cities operate completely differently. The traditional “package” approach to route allocation in Nizhyn and Korosten cities is convenient for both cities and carriers in the short term. However, this makes it difficult to plan for several years ahead, which causes stagnation. At the same time, Chernihiv's experience with the introduction of exclusive rights to service routes with high demand in the city demonstrates a significant alignment of the transport system with EU standards.

2.2. Type of public transport.

According to the PSO Regulation (Regulation - 1370/2007 - EN - EUR-Lex, 2017), the involvement of third parties for the transport of passengers (subcontracting) can contribute to increasing the efficiency of the public transport system as a whole. However, in order to make the best use of public funds, the competent authorities should be able to determine the conditions for the provision of transport, in particular regarding the quality of the condition and availability of rolling stock, adherence to the timetable, etc. Thus, cities will be able to set requirements for the quality of rolling stock more confidently, taking into account characteristics important to the community.

The cities use a package approach to routes. However, **Chernihiv** is closest to the conditions prescribed in the EU Regulation. Their transport network combines the municipal trolleybus fleet with private bus operators. Currently, the city's fleet consists of 94-105 units, enabling stable production of goods. The choice in favor of a Ukrainian manufacturer ("Etalon", "Ataman") is a strategic step to support the national economy.

In addition, in the requirements that the city sets for carriers, all rolling stock must meet the Euro-5 environmental standard or operate from the electric network, which means a complete abandonment of technologically outdated rolling stock of classes A and B ("Ruta"). Thus, since 2022 in Chernihiv, 350 "Ruta" vehicles have been replaced by 160 newer units (buses and trolleybuses). This solution reduces emissions in the transport sector, significantly improves air quality in the city, and helps reduce visual and noise pollution caused by excessive small-scale transport at key junctions, says a representative of Chernihiv. In this way, the city also ensures passenger and driver comfort and inclusivity.

Meanwhile, in **Nizhyn**, the city's transport system is run exclusively by private operators. Unlike Chernihiv, the local government considers the creation of a municipal fleet impractical due to high capital expenditures for equipment purchases and monthly maintenance (according to officials' estimates, about UAH 15-20 thousand per unit of equipment, wages, fuel, and spare parts).

And if Chernihiv completely refuses from "Ruta", the basis of the Nizhyn fleet is made up of buses of the "Ruta-25". Previously, "PAZ" buses were widely used, but they were completely decommissioned. The usual "PAZ" disappeared not only due to age, but also due to geopolitics: spare parts from the aggressor country are officially unavailable. Most of these cars were used for military needs at the beginning of the invasion and, having suffered damage, can no longer be restored. Unexpectedly for the municipality, when such an old fleet was replaced by "Ruta", it caused a wave of passenger skepticism. Employees of the "Progress" plant are used to "cramming" into the spacious cabins of PAZs. Such a large number of people cannot physically fit into a "Ruta".

Nyzhyn also has a requirement regarding accessibility of the rolling stock. However, despite the regulatory requirement for 70% of low-floor buses, this standard is actually not met in Nizhyn. Entrepreneurs are motivated by the high cost of such equipment (about 3 million UAH per unit) and the lack of state or municipal co-financing programs.

Korosten city, in terms of rolling stock, is in a similar situation to Nizhyn. The system relies solely on private bus operators and considers creating its own municipal enterprise economically impractical at the moment. There is only one low-floor public bus in the city (nor seen during the visit). Everything else is Etalons, Rutas, PAZs, and LAZs, which have stairs and are completely inaccessible for people with disabilities.

From the perspective of public transport users, the quality of rolling stock is a direct indicator of the policy's success. As a result, each city already includes certain components in its contracts, but does not always provide clear supervision of compliance with these conditions. If Chernihiv was able to completely abandon outdated "Rut" in favor of environmentally friendly low-floor buses (Euro-5), then Nizhyn and Korosten do not change the accessibility of transport for low-mobility groups due to reluctance to invest and lack of co-financing.

2.3. Route network.

Although the EU Regulation (Regulation - 1370/2007 - EN - EUR-Lex, 2017) does not single out the optimization of the transport network as a separate aspect, the construction and improvement of routes are clear indicators of the quality of system management. These acts determine the cities' readiness for future reforms. Therefore, to assess municipalities' ability to manage the network effectively, it is important to examine how this process is organized on the ground.

Additionally, to visualize pedestrian accessibility and assess stop coverage across the selected cities, I created buffers in QGIS. In accordance with DBN B.2.2-12:2019 "Planning and Development of Territories" (ДБН Б.2.2-12:2019 "Планування і забудова територій", 2019), buffers from stops within a radius of pedestrian accessibility (up to 500 m) were built for selected cities.

Chernihiv, with the beginning of the full-scale invasion, was forced to optimize its route network. Of the 40 routes that existed until 2022, 13 remain, and they have been updated and now cover almost the entire city (Рубрика, 2025). The city also offers a transfer ticket that allows passengers to make multiple transfers within 30 minutes.

In the office of the head of transport, there is a map with accessibility buffers to stops, on which some blind spots are still visible. According to the head, such a map motivates him to improve the quality of transport in the city.

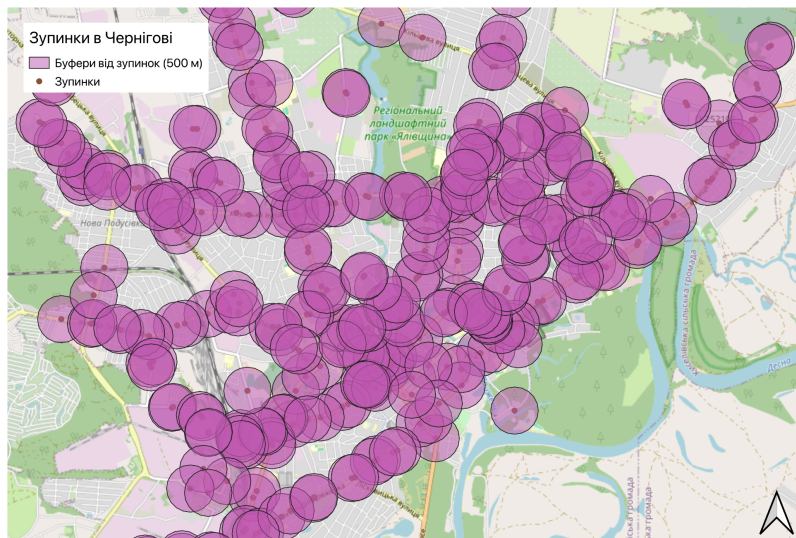


Fig. 1. Pedestrian accessibility buffers from stops in Chernihiv (500 m). Data source: OSM.

As seen on my map, Chernihiv has good overall coverage, but a few districts remain less connected.

Meantime **Nizhyn** has even more routes — 14, which are covering the city and nearby villages (Kunashivka, Pereyaslivka). The network is designed so that most lines converge on the railway station, the main transport hub to Kyiv. In this city, specialists from the Chernihiv National Technological University helped in 2018–2019. New studies (including those involving the Kharkiv Transport Institute) were canceled due to the full-scale invasion. The head of the transport department also has a route map in his office, but it does not indicate the remote accessibility of stops.

But as seen in Fig. 2, the amount is not indicative of a good network. A larger number of routes than in Chernihiv doesn't provide public transport access to a significant part of the city. And Nizhyn is much smaller than Chernihiv. It has become obvious that Nyzhyn should improve its network as soon as possible to provide a better service.

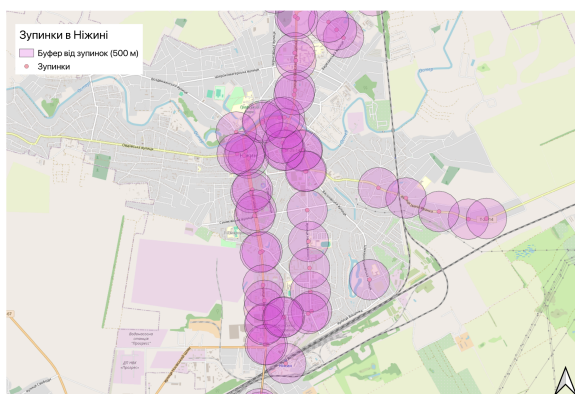


Fig. 2. Pedestrian accessibility buffers from bus stops in Nizhyn (500 m). Data source: OSM.

As for **Korosten**, there are 8 routes. At the same time, they are all tied to the railway station, which causes traffic jams in that area and affects other districts.

Korosten city has a problem location – Nosivskyi Shlyakh. There is an unregulated railway crossing there, through which it is forbidden to lay direct bus routes. To address transport accessibility, the city has semi-legal agreements with carriers to help people get to work.

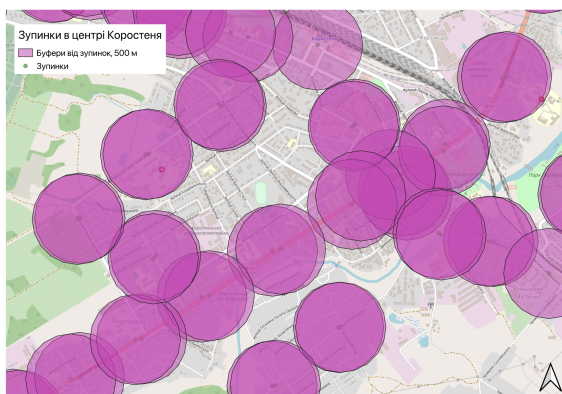


Fig. 3. Pedestrian accessibility buffers from bus stops in Korosten (500 m). Data source: OSM.

Spatial analysis of stop location data in selected cities shows that the number of routes alone does not equal quality. Despite having many routes, Nizhyn with 14 routes and Korosten with 8 routes, still have the networks which are deeply unbalanced: they have “blind spots” and congested areas, especially near the railway stations. On the other hand, Chernihiv, which is much larger, by reducing the network from 40 to 13 routes, has ensured more uniform and efficient coverage of the entire city area with the possibility of transfers.

2.4. Interaction with other cities.

By learning from the experiences of other cities in Ukraine and Europe, local authorities can efficiently shape local transit policy, drive network transformation, and avoid common mistakes.

The greatest experience in sharing knowledge **Chernihiv** has. During the preparatory stages of the reform, transport managers studied European experience, especially in Lyon, as part of the long process of preparing the reform. When launching transport cards, there was an attempt to cover the entire Chernihiv region. Still, at the regional level, the initiative met with resistance, so the system was fully deployed only within

the city limits, where about 97% of passengers are currently registered (according to the Chernihiv city transport department).

Poltava and Ternopil are actively interested in Chernihiv's experience. Poltava often seeks advice on technical implementation and transition to a new model. In Ternopil, the system works on a similar principle, but with a different approach to old rolling stock: in Chernihiv, no surcharges are made at all for old cars, such as "Rutas", in order to stimulate fleet renewal. In addition, the Chernihiv Transport Department makes all necessary documents and developments publicly available (in particular, via the CIVINET network) for use by other communities.

Nizhyn also maintains close ties with neighboring communities, especially in transportation issues, and employees consult with Pryluky. This applies to issues of tariffs, organizing competitions, etc. Nizhyn also studied Chernihiv's experience in implementing transport reform and electronic tickets, but the Nizhyn authorities did not support the proposal submitted at that time.

For their part, representatives of Chernihiv note that cities such as Nizhyn are in no hurry to adopt their system due to the complexity of bureaucratic procedures (the need to conduct procurement through ProZorro) and the reluctance of private carriers to work legally ("в білу"), refusing cash.

In addition, in 2018–2019, Nizhyn involved Chernihiv National University in researching passenger flows. Students rode buses and recorded the number of passengers in different seasons, which allowed Nizhyn to successfully optimize its route network without complaints from residents or carriers. Nizhyn intended to continue analyzing passenger flows for further optimization of the network and received an offer from the Kharkiv Transport Institute, but due to the outbreak of a full-scale war, this cooperation was suspended.

And **Korosten** is less active in terms of external communications. The local authorities, together with developers from Vinnytsia, created the Rozklad.in.ua program, which allows passengers to view the public transport schedule and track the arrival times of buses at stops. For some time, representatives of local authorities have been studying the experience of Lviv and Zhytomyr in implementing a validation system for municipal transport. And sadly, this is one single example.

As a result, the chosen cities clearly demonstrate a lack of horizontal communication between municipalities. Since cities do not communicate with each other, they often

solve the same problems from scratch, making the same mistakes. Chernihiv is a rare example of openness to sharing experiences with other communities, but bureaucracy, the complexity of tender procedures in the ProZorro system, and irrational resistance hinder the spread of their solutions and methods. Additionally to the national policy to reform the public transport system, there should be local programs to improve the internal connectivity and interaction within cities.

3. Financing procedures.

The Regulation 1370/2007 defines the mechanisms for financing transport services, as well as tender and compensation procedures (Regulation - 1370/2007 - EN - EUR-Lex, 2017). In accordance with the Regulation, expenditures eligible for budget coverage include staff and electricity expenses, infrastructure access fees, and fleet maintenance and repairs, as well as fixed costs and a reasonable return on capital. However, no compensation payment may exceed the amount necessary to cover the "net financial effect," taking into account the costs incurred and the revenues generated during the implementation of the PSO, as well as its reasonable profit.

In addition, the Regulation also encourages transport operators to invest in infrastructure, rolling stock, or other measures that improve the quality of service provision. In such cases, carriers may be granted preferences for further operation.

3.1. Transportation costs.

Taking transport costs into account is an important part of research, as they directly determine the accessibility, viability, and social role of public transport in cities. For passengers, these costs are a basic factor in daily mobility and economic well-being, while for municipalities and transport operators, they form the basis of financial planning.

Chernihiv has worked most on fare grading to reduce the burden on the city budget, while not creating a burden for passengers. Thus, an expanded tariff grid is in effect in Chernihiv (as for March, 2026).

12.00 UAH – when paying for travel using an electronic ticket + transfer within 30 minutes from the moment of purchasing the ticket;

15.00 UAH – when paying for travel with a contactless bank card or a device with NFC technology;

17.00 UAH – when paying in cash from the driver;

5.00 UAH – for students of secondary education institutions in Chernihiv when paying for travel using an electronic ticket, with a student ticket + transfer within 30 minutes from the moment of purchasing the ticket (Затверджені тарифи на проїзд в

автобусах на міських маршрутах загального користування, 2024). Pensioners and other vulnerable categories of the population who are entitled to free travel do not pay for the ride.

Chernihiv has a system of extended compensation and clear tracking of income and expenses. The current compensation formula is based on how many kilometers per hour fleet made and is not tied to the number of passengers transported (Програма компенсації пільгових перевезень, 2024). This reduces social conflict between carriers' desire to earn more per passenger. Thus, drivers need to adhere to the schedule regardless of flight load.

The financial model of PSO in Chernihiv may be described as:

$$[Cost\ of\ 1\ km\ (established\ by\ the\ executive\ committee) \times Actual\ mileage] - Revenue\ collected = Surcharge\ amount$$

The city currently estimates the cost per km at UAH 44. Therefore, each company reports on flights and kilometers performed; this information is checked through trackers and other related data, and, subject to compliance with other requirements, receives compensation for transportation.

"The cost of a transport service is a calculated tariff for one kilometer of travel. If we understand that one kilometer costs a nominal 44 hryvnias, then the city's task is to ensure payment for this kilometer regardless of whether there is one person or thirty people in the cabin,"

- says a representative of Chernihiv.

To simplify the understanding of the compensation mechanism, let's consider a small example. Cities with carriers can determine the monthly volume of transport work performed, for example, 100 km, and also fix the cost price in the contract (tariff per 1 km). According to a representative of Chernihiv, the price in the city is 44 UAH (Тотальне перезавантаження: Як війна трансформувала громадський транспорт Чернігова, 2021).

In this case, the full amount the city must pay the carrier for performing this volume of work is 4,400 UAH (100 km × 44 UAH/km). But the revenue passengers paid for tickets during the reporting period (through validators or conductors) is also taken into account. For example, let's take 3,700 UAH. These funds are sent to the city budget. And since the revenue does not cover the costs, the city compensates the carrier for the difference of 700 UAH (4,400 UAH - 3,700 UAH). As a result, the carrier is guaranteed to receive 4,400 UAH per kilometer of work performed, regardless of the number of passengers transported, ensuring route stability and traffic safety.

The legal security of the reform is based on the Law of Ukraine "On Road Transport", which allows local governments to develop support programs. However, for cities, an additional guarantee is protection from accusations of providing illegal state aid. In Chernihiv, this mechanism was implemented through strict adherence to the four Altmark criteria, which transform payments from risky subsidies into legal payments for services. The listed factors, along with a deep understanding of the processes, have a significant impact on officials' readiness to transform the city's transport system.

Payment to transport operators is made strictly within the budget allocations. This model allows maintaining the tariff for the population at an acceptable level, given that 45–50% of passengers in Chernihiv belong to preferential categories and, since 2026, travel for pensioners has been free. However, the introduction of this policy has led to a financial imbalance in the system and a budget deficit, which creates risks of underfinancing transport work. Such a step encourages carriers to work towards maximum revenue generation.

Chernihiv has introduced a strict requirement for transport companies operating in the city: the minimum driver's salary must be UAH 15,000, and it is currently over UAH 21,000 (Новий Чернігів, 2024). In addition to guarantees for drivers, the city has also contributed to the tax revenue policy by setting a mandatory driver-to-unit ratio of 2.0. Financial transparency, provided by the ProZorro system, turns subsidies into investments that return to the city.

Despite the presence of a municipal transport enterprise, Chernihiv experts recognize that cooperation with private carriers is much more effective for the budget. In the city, the cost per kilometer for a private operator is ~52 UAH, while for a municipal enterprise it is ~80 UAH. This difference, experts explain, arises due to a larger staff, territory, and fleet, as well as more complex tender procedures.

Nizhyn also has a fee structure based on passenger type, but unlike Chernihiv, it charges pensioners. In March, 2026 the usual fare is 14 UAH, pensioners pay 10 UAH, and schoolchildren pay 8 UAH (Юлія Суржикова, 2022). The categories of the population entitled to free travel have no restrictions on the number of trips, the time, or the number of seats in the cabin. Due to the lack of electronic accounting, drivers issue zero tickets. Compensation to carriers from the budget is based on reports submitted to the tax office, and provided, as Nizhyn representative said, when at least 95% of the planned rides are completed.

However, the routes in Nizhyn have different social weights for the population. Thus, according to the officials, the data of the 2018 study even then showed critical inequality:

- Route No. 13: The real cost of the ticket was 17 UAH.
- Route No. 39: the cost was lower than 10 UAH.

Currently, when the tariff in the city is maintained at 14 UAH, and in the neighboring Nosivka to Nizhyn it has reached 20 UAH, this system, according to a city representative, is based solely on the fact that "the center feeds the outskirts".

A municipal fleet remains a dream, as only the operating costs for one car (fuel, spare parts, driver's salary) are estimated at 15–20 thousand UAH per month, which is an unbearable burden on the city budget.

There are diverse situations in **Korosten**, where the fare in March, 2026 is 20 UAH (Міський транспорт - Коростень, 2026) and there is no diversification by route. As for counting, drivers manually record working hours and fuel costs (mileage, trips, diesel) on paper. According to workers, electronic records should not be introduced, as this will complicate the reporting procedure.

The city allocates more than 5-6 million UAH per year for compensation for preferential travel, the local representative says, but the municipality hasn't significantly improved conditions.

The payment-per-kilometer model, which operates in Chernihiv in accordance with the PSO, guarantees the carrier's income, increases competition among drivers, and contributes to the de-shadowing of the economy. The last tax payment allows the fleet to be updated. In contrast, Nizhyn and Korosten are struggling with financial imbalances, lack transparency in operations, and systems that make planning fleet renewal much harder.

3.2. Tax incentives.

The Regulation specifies that cities may establish compensation for the transportation of various preferential categories (Regulation - 1370/2007 - EN - EUR-Lex, 2017, Article 3). In addition to the preferential categories defined by the state, which are entitled to free travel, cities may designate other categories of the population for which preferential travel conditions may apply.

Since 2025, the regional administration of **Chernihiv** has introduced a decision on free transportation for pensioners (Щодо права на пільговий проїзд, 2025). According to calculations shown during an interview in the office, the share of

passengers entitled to free travel after such a decision is about 45–50%, which has a noticeable negative impact on transport companies' financial revenues and creates a general imbalance in the previously formed system. Drivers have also formed a negative opinion of pensioners as passengers who "just ride". Before that, pensioners paid for travel on public transport, but not the full ticket price.

Meanwhile, **Nizhyn** uses a system of differentiated tariffs for pensioners and schoolchildren. The lack of an E-ticket leads to an informal accounting model: drivers issue "zero tickets" (нульовий квиток), and reimbursement from the budget is based on paper reports to the tax office. This creates risks of opacity and the impossibility of an accurate audit of passenger traffic.

And the other way is in **Korosten**, where the municipality has reached an agreement with transport companies, so each bus has 2 preferential seats per trip. Military personnel, primary school children, and people with visual disabilities in the 1st group travel free of charge, and people aged 70+ use a coupon system (8 free trips per month) (Коростень-Інфо, 2022). However, this system is not inclusive, and on the contrary, it can give rise to conflicts. Thus, despite the established quotas, there are cases in which drivers take only two preferential passengers instead of four, demanding payment for the trip from the combatants (УБД¹).

Thus, some cities, aiming to reduce budgetary compensation, introduce a fee for privileged categories at a preferential rate. This allows carriers to receive the expected profit and, at the same time, plan expenses for updating rolling stock or carrying out repairs. At the same time, as the number of people paying for travel decreases, the equilibrium is disturbed, leading to a deterioration in transport performance. Shifting the financial burden for beneficiaries to carriers provokes acute social conflicts. In Nizhyn, a differentiated tariff with reduced fares for schoolchildren and pensioners mitigates the problem while preserving the archaic system of "zero tickets". In Korosten, the quota of 2 preferential seats per bus creates discrimination when drivers demand money even from veterans. Only full coverage of these costs by the budget (as in Chernihiv, where beneficiaries make up to 50% of passengers) allows avoiding conflicts on the road, although it requires financial support from the city and strict compliance with the terms of contracts.

3.3. Control and evaluation of the quality of transport service provision.

The essential part of the Regulation is that the city or state compensates transport operators for part of the costs of servicing socially important routes (Regulation - 1370/2007 - EN - EUR-Lex, 2017, Article 4). The calculation is based on ticket sales

¹ Учасники Бойових Дій

revenue, but all supporting documents must be prepared for this. When concluding contracts, the parties guarantee the reasonableness of payment amounts, and the municipality encourages the operator's commitment to efficiency and high-quality services.

But all these expenses and profits must be clearly tracked and supported by documentation. Therefore, it is important to find out at what stage of transparency the systems in Ukrainian cities are currently.

In **Chernihiv**, 2 systems are used to monitor compliance with the competition terms and the quality of transportation services: an automated fare accounting system (hereinafter referred to as "AFAS"), which allows tracking each passenger, and GPS monitoring to track each flight.

The implementation of this solution has ensured transparency in financial transactions and provided opportunities for data collection and analytics to improve transport in the city. Although at the initial stages, validators often failed (double-debiting, refusal), the system has now been adjusted, passengers have called, and instructions have been developed for city guests.

Cashless payments have significantly accelerated the boarding process for passengers and reduced stress and distraction for drivers. The absence of a queue at the driver or conductor has reduced delays at stops that previously occurred when a change was needed. There is also convenience for conductors: even during rush hour, they can control payments at a glance without moving through a crowded cabin. Undoubtedly, these passengers can track public transport movements using electronic displays at stops or in applications.

During alarms in Ukraine, electronic warfare devices are used, so in this case, the railway signal does not correspond to the actual location of the rolling stock on the route. But for Chernihiv, muted GPS signals are not grounds for stopping control. As an alternative solution, manual correlation is used: carriers conduct operational chats in Viber (recording departures, breakdowns, alarms), and the control department daily checks this data against the "Dozor" system schedules and the stability of revenue. This allows you to verify the performance of work even in the absence of a stable satellite signal.

The city also holds regular competitions for routes on ProZorro, and there is daily monitoring of the quality of transport services and compliance with contract terms.

The main criterion is the regularity of traffic at 94% (Час Чернігівський, 2026). If the carrier does not comply with the schedule or other terms of the competition, the additional payment for the route for the month is not made. Representatives of the Transport Department receive data from carriers daily and check the indicators.

While everything is automated in Chernihiv, in **Nizhyn** transportation quality control is mainly carried out through manual checks, citizen feedback, and financial conditions, since there are no AFAS or similar electronic applications for tracking transportation in the city. Nizhyn worked on a project to implement AFAS, but the process stalled at the stage of determining the operator. Currently, the city authorities are considering the possibility of using bank cards instead of special transport cards to avoid difficulties for visitors and military personnel.

For now, Nizhyn keeps relying on zero tickets. These are paper receipts for beneficiaries that drivers must issue manually. This is archaic, but the only way for the city to somehow verify passenger traffic and compensate carriers for the costs of transporting veterans, pensioners, and schoolchildren.

GPS trackers are installed in the rolling stock, which allow you to track transport traffic in special applications. The city authorities require carriers and drivers to pick up and drop off passengers only within designated stops, categorically prohibiting stopping "on demand." At the same time, passengers and drivers noted that this rule is sometimes violated.

The city relies more on passengers in matters of adherence to schedules or the quality of rolling stock. People often call with complaints, after which responsible officials personally go to the route to check.

The city reimburses carriers for the transportation of vulnerable categories only if they complete 95% of all scheduled trips, yet it lacks transparent tools for high-quality calculation and analysis of the provided transportation services. To prevent road races, a special commission drives the routes with drivers, calculates the schedule so that the speed does not exceed 30 km/h, and instructs drivers not to rush.

In **Korosten**, passenger registration is also carried out manually. City council employees ride buses from the beginning to the end of the route once every few years, during the week (in different seasons), and record the number of passengers and beneficiaries at each stop.

The compliance rate among carriers is 97-98%. At the end of each month, the authorities analyze the reports: if the flight is not completed, the carrier's compensation is reduced.

Korosten once reached an agreement with the carriers, so since 2014, all buses have been equipped with GPS trackers. Passengers can track their transport via the online applications "Dozor" and "rozklad.ua". There is only one electronic scoreboard in the city, and the municipality is looking for funding to scale the project. But this data is not taken into account by local specialists. Such a lack of systematization, and even more so the limitations in the means of control, show their inefficiency, and also leave room for doubts about the validity of the data and the overall transparency of the system in the city.

Transparency of market conditions and monitoring of service quality depend not only on technical conditions but also on the quality of control, so various means are effective tools for managing the transport network, both for operators and for municipalities. Without digital tools (ASOOP and GPS), any control remains a fiction. By requiring 94% of schedule execution through online monitoring and dispatching of all public transport, Chernihiv makes manipulation impossible and guarantees passenger predictability. In contrast, in Korosten and Nizhyn, inspections by officials are conducted manually only every few years or only upon complaint, casting doubt on the declared flight performance indicators and leaving room for drivers and carriers to conceal the actual passenger flow.

4. Social impact.

The establishment of social and quality criteria to maintain and raise standards of performance of public service obligations is an important part of the reform of public transport (Regulation - 1370/2007 - EN - EUR-Lex, 2017). In particular, this affects working conditions, passenger rights, environmental protection, and passenger and worker safety.

Another tool of social spillover is giving the authorities the freedom to introduce specific social standards and service quality requirements. In cases where competent authorities require transport operators to comply with certain quality standards, these standards must be specified in the tender documents and in public service contracts. Such aspects enhance the social component of passenger interactions with the public transport system and are also an important component for workers in the industry.

Based on observations and communication with people in selected cities, various components of interaction were noticed.

The leading component in the context of sociality and the number of people participating is the marshrutka–passengers. Such interaction is based on passengers' acceptance of the marshrutka as an element of public transport, and the marshrutka's driver is perceived as an integral part of the vehicle. In addition, people's prior experience with marshrutkas already shaped their views, so sometimes the responses of the passenger respondents were polarized. The interaction of municipal transport passengers is similar.

Another interesting experience is communication between marshrutkas or between two drivers of public transport. In this case, it is worth considering the drivers themselves and their communication with colleagues while driving, at stops, and in staging areas. Such etiquette consists of greetings (hand waves), yielding when leaving/turning (briefly turning the high-beam headlights on and off), and gratitude (turning on the hazard warning lights for a few seconds).

For high-quality communication on the road, in addition to the social situation in the team and personal relationships, the factor of private operators working in the city may also be a consideration. Thus, in Korosten, some drivers of one transport operator spoke negatively about the drivers of another company:

"I greet everyone from my company. But there are companies where they go there, they don't look anywhere at all, no one even says hello to them".

In Chernihiv, on the other hand, drivers do not have such pronounced competition among themselves, so the number of such internal conflicts is much lower.

The third option for interaction is marshrutka–municipal transport in cities where both private and municipal carriers operate. This case applies only to Chernihiv, since only in this city does public transport have different forms of ownership. Thus, trolleybus drivers noted that marshrutka drivers can sometimes cut them off (violate traffic rules, deliberately create obstacles). In turn, marshrutka drivers said they do this not on purpose, but because the trolleybus moves slowly.

4.1. The subjective dimension of the transport workers.

The working conditions of transport employees are an important social issue for the city and its passengers, as they are mentioned in the Regulation. Everyone's safety depends especially on the driver's workplace, so it is important to understand the problems and development potential from the transport company employees perspective.

Chernihiv is an example that even a modern low-floor bus does not guarantee inclusiveness. Due to potholes at the stops, drivers cannot get close to the curb, which negates the advantages of the low floor.

Additionally trolleybus drivers complain about the actions of private marshrutka drivers (in particular on routes No. 31 and No. 24), who resort to "cutting" or deliberately "stretching time" to get ahead of a competitor and "pick up" passengers at the next stop.

Despite the difficulties, one of the interlocutors shared a personal story about finally realizing his life's dream – to be a trolleybus driver:

"It's somehow romantic in the morning. I see, all the drivers say that in the morning when you drive, the city is so empty, there are views... churches, a forest park. Plus the adrenaline when you're late... A dream comes true."

The specific rhetoric of trolleybus drivers also marks part of the interaction. Thus, "pull over" describes the need for trolleybus drivers to artificially slow down, give way, or adapt to the driving style of the marshrutka driver, as the latter uses signals to push back, crowding out slower transport:

"I need to pull over for the shuttle bus. It's buzzing there, you know, it's picking me up."

At the same time, drivers of private enterprises have other problems. For example, one of the respondents noted that, due to budget constraints, enterprises cannot ensure the operation of car washes, leading to dirty transport.

There is a consensus among public transport drivers about their acute irritation with driving school cars. According to comments, instructors do not control the use of light signals, which creates emergencies.

During the initial period of the transition to the electronic ticketing system, there was significant demand for new cards, which were in short supply. So, conductors were entrusted with additional explanatory work for passengers. Conductors also noticed irrational behavior among passengers: low-mobility groups ignored the rear doors with low floors and ramps, instead trying to "climb" the high steps of the front doors, according to old habits.

Meanwhile in **Nizhyn** drivers engage in "shadow accounting," independently distributing cash at the end of the shift into three categories, making the traffic schedule secondary to the financial plan:

"How much do you take home, how much do you drop off at the ATC (auto transport company), how much do you pay for gas?"

This approach also creates a rigid hierarchy of priorities, in which drivers are treated much better than passengers who pay the full price and are the main financial asset the driver is trying to maximize.

In contrast, passengers in preferential categories who pay 10 and 5 UAH are treated less preferentially, since they reduce the trip's marginality. The most critical situation is with passengers who are entitled to free travel. From the drivers' point of view, this is an additional burden, but the risk of complaints is a significant lever for avoiding such categories of passengers. According to the legislation and instructions, the driver must issue zero tickets to passengers, based on which the city reimburses the carriers for costs.

"There are zero tickets, drivers provided them off, and we reimburse expenditures based on this. Operators submit reports to the tax office, and we reimburse them based on these reports."

says a city representative.

At the same time, there is no accounting of "free" passengers, according to the drivers themselves:

"A man showed their ID and left... Why remember it? That's what you should do, but no one does it."

A separate value category is for military passengers. Here, economics is inferior to the driver's emotional solidarity, despite the specific reaction of civilians:

"In the 80th, I was full (загрузився битком) with military passengers... And it feels so good in my soul that it's horrible! That I'm taking everyone for free."

Nevertheless, he records a social gap:

"People stop, they see the military, and they don't want to get on the bus."

This is an interesting phenomenon of a kind of "professional violation": some drivers admitted that they often have to violate traffic rules. From the phrases describing this behavior by drivers, it becomes clear that they don't regret it much:

"I violate every single day. I violate every single day. That's the job," shared one of the drivers.

However, at the same time, they are worried about control from the police or the company:

"Interviewer: Do you stop at a stop if a person asks a lot?"

Driver: If he asks very much. Especially when there are a lot of them, I looked in the mirror – there are no cops, and I stopped. Otherwise, I can also get a police protocol. That's all.

I: Sure. And if there aren't many asking passengers?"

D: I also stop, but I always look in the mirror. I always look ahead to see if they (policemen) are sitting in the bushes. As always. It's unclear."

Unlike Chernihiv, in Nizhyn there is a significant gap between formal rules and drivers' actual behavior.

And finally in **Korosten** local drivers describe their work as extremely stressful due to poor road conditions, difficult weather conditions, and inexperienced private car drivers. However, older drivers with more experience appreciate the opportunity to "sleep at home every day," comparing this work to that of truckers. When communicating with retired passengers, drivers often follow the rule "silence is golden".

During a break between trips at the final stop, drivers close the bus doors and spend some of their time counting cash and writing on the appropriate sheets. Instead, in Chernihiv, all this work is carried out automatically using electronic equipment and dispatching systems, reducing the number of responsibilities assigned to the driver.

The biggest traffic jams occur near the local market on market days. Due to the chaotic parking of private cars in a "herringbone" pattern, the road narrows to one lane. Marshrutka drivers demand that the police regulate traffic on this section.

During the research trip in Korosten, I noticed an interesting contrast between what the drivers said and how everything actually looked. Despite their restraint in criticizing employers, everyday realities proved more eloquent: on March 1, when the

city was still covered in snow, some marshrutkas continued to run on summer tires. This incident became an impetus for comparison: on subsequent trips to other cities, I began to pay close attention to the condition of public transport wheels. As it turned out, in other regions winter tires were the norm, which highlighted a certain local specificity of Korosten, where the issue of safety and car technical maintenance sometimes takes a back seat to economy or habit.

In all cities, the drivers interviewed complained about the condition of the roads.

"The roads will be repaired. The snow has gone – there are no roads," states a driver in Korosten.

"They should make the roads normal! Look, there are only potholes in the city." It is already the case in Chernihiv.

Despite some differences, drivers in all cities complained in various ways about current working conditions, but would welcome positive changes. But more importantly, transport workers in each city noted that the lack of drivers is a problem. The equipment may be in good condition in the depot, but the route will not be serviced, because there is no one to drive. Even if a new operator with a modern fleet enters the city, it will face the same problem.

An outdated management model creates a toxic working environment for drivers. In Nizhyn, the need to meet the cash plan forces drivers to deliberately and daily violate traffic rules, create road hazards, and form a hierarchy of passengers, in which passengers in preferential categories are treated as a burden, since they pay much less or ride for free. In Korosten, this is compounded by the stress of poor roads. Automation of processes in Chernihiv removes the cashier function from drivers, allowing conductors in the cabin to focus more on controlling passengers. Such a transformation significantly reduces stress and conflict. To ensure proper conditions, it is important to both update the rolling stock, as new cars are more convenient and comfortable to drive, and reduce the amount of paperwork that takes up additional time. At the same time, a common challenge for all cities remains an acute shortage of personnel due to only partial employee reservation.

4.2. The passengers' perspective on daily mobility.

Rather than prioritizing a high volume of respondents, the focus was placed on selecting diverse groups, such as parents with children, friends, or pensioners. This approach facilitated the consolidation of opinions, as participants were able to build on and complement each other's insights.

Chernihiv regularly conducts surveys among residents to assess the quality of service provision (Управління транспорту, транспортної інфраструктури та зв'язку, 2026). The main conclusions made by the municipality are:

- The overall level of residents' satisfaction with transport, according to the latest survey, was 65-70%.
- The replacement of "Rutas" with better-quality transport units has led to a significant reduction in noise and improvement in air quality in the city.
- The rate of accessibility in buses has reached 96% and in electric transport, 87%, making the city one of the leaders in barrier-free access.

Passengers clearly distinguish between new "blue" trolleybuses (municipal property) and old rolling stock ("white and yellow" marshrutkas). New models provide comfort thanks to air conditioning and a quiet ride, while old cars "rattle" due to excessive vibration.

In addition, in Chernihiv, passengers complained that there are not enough routes in certain areas of the city:

"We have 4, 33, and 27 there. That's all, nothing else runs."

But considering the coverage of public transport routes in other cities, one gets the impression of much higher demands and expectations for transport in Chernihiv. This means that the most critical problems have already been solved, which is why passengers are paying attention to other aspects.

Older passengers and people with children prefer trolleybuses because of the calm pace of movement, while complaining about private carriers ("blue" and old buses), whose drivers work in the "Schumacher" style, which can cause people to fall in the cabin during sudden braking. However, if people need to get there quickly, even these categories of the population choose marshrutkas.

Chernihiv has a fairly dense network of stops. It is not ideal, but most passengers wait at the stop complexes rather than demand a stop in an unequipped area. Another convenient feature for passengers is digital displays at stops that show the current arrival time, regardless of ownership.

Nizhyn is notable for its vibrant cycling culture. Bicycles are used for urban mobility regardless of age or gender. Most often, during the warm season, especially in summer, residents switch to bicycles en masse, leaving bus routes half-empty. At the

same time, in winter, demand for transport increases sharply, leading to complaints about the shortage of cars.

«I often tell people: if you ride bicycles in the summer, then ride in the winter too. Because it turns out like this: while the sun is shining, there is no need for a bus, but when the snow has piled up, and the roads are not cleared, "let's get the buses"»,

states a representative of the city administration.

Feedback from passengers is limited to reactions to complaints. Systematic surveys or other methods to gauge passengers' opinions on transportation quality are not conducted.

In connection with the replacement of rolling stock from PAZs to Rutas, at first, passengers complained about deteriorating transportation conditions and greater crowding, despite the newer rolling stock. The fact is that although PAZs had fewer seats, they were wider and could accommodate more passengers.

Unlike **Korosten**, the municipality does not have a practice of conducting surveys and assessing passenger satisfaction with public transport. They also analyze appeals and complaints. The most common problems for passengers from remote areas of Korosten (Chyhyryi, Bilokorovytske highway) are overcrowded buses during the morning rush hour, and the lack of flights after 8:00 p.m. Residents of the suburbs also mentioned the rude and disrespectful attitude of drivers towards students and pensioners. Passengers also complain about poorly equipped stops, where the visors do not protect from either rain or sun.

In Korosten, the practice of "on demand" stops is widespread: passengers emotionally wave their hands and normalize drivers who agree to pick them up or drop them off, despite traffic violations. And such an action is perceived as the norm, unlike Nizhyn, where de jure drivers do not have to stop, and de facto, as described, they can pick up passengers.

Many surveyed townspeople prefer their own cars, walking, or electric scooters in the summer as urban mobility solutions rather than taking marshrutkas. The main reasons are poor sidewalks for stroller travel, which make it difficult to get to and from stops; the need to carry things; the desire for independence; and the lack of routes near home.

The level of satisfaction with transport is directly correlated with the chosen management model. Thanks to new buses, low floors (96% accessibility) and electronic scoreboards, the satisfaction of Chernihiv residents reaches 65–70%. The subjective experience of passengers in smaller cities is radically different: dirt, “on-demand” stops in the middle of the road, driver rudeness, and the inability to leave after 8:00 PM are the chronic disappointments of citizens with public transport.

Thus, we see that it is important for cities not only to invest in infrastructure development and evaluate economic indicators, but also to directly ask people whether these changes are noticeable to them and whether they are sufficient. Such experience improves trust between the population and the authorities and also helps correct, more effectively, significant shortcomings in traffic organization that are important for passengers.

4.3. Other ways of urban mobility.

The availability of alternative urban mobility solutions significantly influences people’s daily choices. When the municipal network fails to meet basic needs for speed, comfort, or safety, citizens are more likely to diversify their travel strategies. Public transport passengers may be forced to switch to cars, creating congestion and parking problems. Also, the active development of micromobility may be a sign: the use of bicycles and the prioritization of walking for short distances are more welcome because of a lack of good transport connectivity.

For example, since the beginning of the full-scale invasion, the number of private cars in **Chernihiv** city has increased. Still, they are now more often used for emergency evacuations than for daily trips. Drivers of their own cars choose cars for comfort and for transporting large loads. However, the renovation of the public transport system has affected some car enthusiasts, and now they use public transport more for daily trips. Parents with children also use public transport freely and willingly, as more and more rolling stock is becoming low-floor.

Korosten also struggles with a lot of cars, but not for security reasons. Residents choose their own cars because of the lack of routes near their homes, a schedule with many gaps, and the generally unsatisfactory state of the public transport infrastructure (rolling stock, condition of stops). Partially, the inconvenience of pavements and urban planning has taken place.

While in **Nizhyn**, the situation is completely different. Passenger traffic drops sharply in the summer, because many residents switch to bicycles. This speaks to passenger

convenience, but leads to the unprofitability of transport. So it is important to consider how routes can be optimized based on the season and the needs of the population.

The degradation of the route networks forces residents to resort to forced mobility strategies. In Korosten, the unpredictability of public transport drives people to use private cars, which further turns the city center into a continuous parking lot. In Nizhyn, in the summer, the population switches en masse to bicycles, leaving public transport half-empty. This proves that without the transition to the European PSO model, cities lose passengers, and the public transport system falls into a vicious circle.

Thus, the EU regulation concerns not only policies for the formation of a holistic system and financial mechanisms, but also aims to ensure people's rights to mobility in cities using all these tools. The subjective experience of passengers and drivers most clearly highlights the consequences of the chosen models. In Chernihiv, thanks to the renewal of rolling stock and infrastructure, clear criteria for carrier control, and growing passenger numbers, passenger satisfaction with the transport service is increasing. Improvements in conditions also affect drivers' incentives to work.

In Nizhyn and Korosten, the situation is radically different: drivers work in constant stress, since their earnings depend on the cash plan. Because of this, they consciously violate traffic rules and can choose the passengers they will carry on a personal level. As a result of this policy, in Nizhyn passengers switch to bicycles in the summer, and in Korosten people choose their own cars, exacerbating the problem of traffic jams.

CONCLUSIONS

The study reveals that citizens' daily mobility experiences are constructed cumulatively: first, through their direct, lived interaction with marshrutkas, and then through constant comparison against alternatives of the transport network. And the nature of the citizens' satisfaction depends entirely on the chosen management model. Beneath the traditional commercial model, among Ukrainians marshrutkas are associated exclusively with negative experiences: passengers suffer from a lack of inclusiveness, poor-quality stops, and schedule disruptions, and choose private cars instead. Similarly, marshrutka drivers work in a state of constant stress and with additional responsibility for cash accounting. However, under the condition of transition to the European management model (PSO), the interaction changes radically: marshrutkas become part of a single, predictable, and controlled system, which makes mobility more comfortable, reduces social inequality, and restores citizens' trust in public transport.

Firstly, the regulatory framework and international experience were examined. This concerned Ukrainian legislation and a comparison with the relevant EU Regulation 1370/2007. Marshrutkas in the countries of the former socialist bloc emerged as an alternative to the stagnant public transport system. On the one hand, marshrutkas served as direct transport, delivering passengers; on the other, they took the profit for themselves, preventing the city from getting public transport back on its feet.

Also, an important part of the work was familiarization with the experience of Latvia and Georgia in transforming their transport systems, similar to the Ukrainian one, to European standards. Reforming cities and eliminating marshrutkas are indicators of strengthening public transport and the city's overall transport network, as happened in Latvia. But at the same time, the experience of Tbilisi shows that it is possible to find common ground with private companies so that this cooperation benefits both the company, the city, and passengers. But all this can be implemented with political will.

This analysis showed that the key mechanism for overcoming the transport crisis is the transition from charging by passenger count to paying carriers directly for 1 kilometer of transport work performed. This approach provides carriers with a "reasonable profit" and guarantees the maintenance of unprofitable, but socially important routes for the city.

The next step was a study of transport policy in cities. The real state of transport management in three cities (Chernihiv, Nizhyn, and Korosten) was analyzed. This was achieved through semi-structured interviews with specialists, conversations with

residents, and the use of QGIS modeling. The study showed that Chernihiv successfully optimized its network and systematically updated its rolling stock. At the same time, in smaller cities, route networks are still tied to congested nodes (for example, train stations), have many "blind spots", and are completely inaccessible to low-mobility groups.

Another important stage was the analysis of financing and service quality control systems. It was considered how tariffs are formed, how beneficiaries are accounted for, and how compliance with transportation conditions is monitored in the selected cities. As a result, it was found that the introduction of an automated system of fare accounting, GPS control, and dispatching, as done in Chernihiv, completely de-identifies revenues and stops carrier competition for passengers. Instead, one-time checks, the distribution of paper "zero tickets," and the collection of cash by drivers in Nizhyn and Korosten are a drag on the current opaque system, exacerbating the financial imbalance.

And no less important is the understanding of the social impact of public transport. Ethnographic research methods allowed us to analyze the subjective experience of drivers, passengers, and officials. This analysis revealed deep social conflicts of the current system: due to financial pressure, drivers treat beneficiaries as a "burden", often violate traffic rules, and complain of stress. At the same time, a paradigm shift in work organization, the introduction of electronic tickets, and the introduction of new buses significantly reduce social tension, simplify drivers' work, and increase overall passenger satisfaction with public transport.

In cities across Ukraine, there remains a dichotomous perception of marshrutkas: in large cities, including the capital, they are an unnecessary obstacle to "quality" public transport, which, according to the public expectations, should be municipal (Пасажири Києва, 2026). At the same time in smaller cities, marshrutkas, as a form of public transport, are the most optimal solution for addressing mobility issues. However, from interviews with various stakeholders and users of the public transport network, it becomes clear that, in such cases, it is important to establish processes properly.

Thus, having analyzed all the above aspects, a comprehensive algorithm for transforming the approach to transport work is proposed, including: harmonization of laws with the EU, transition to payment per kilometer for transport work, route replanning, tough competitive conditions for carriers, and digitalization.

Taking into account the main aspects specified in the Regulation, as well as the analysis of the current situation in the cities of Ukraine, the following algorithm for transforming the public transport system can be drawn up to implement an effective reform of socially important public transport:

1. Harmonization of legislation at the national level. This step is crucial from a national policy perspective, so the developed and adopted draft law must be fully harmonized with the relevant EU Regulation. This will create a reliable legislative basis for the functioning of the transport system, provide additional legal guarantees for competent authorities (cities) and carriers, and also mark a milestone in Ukraine's European integration.
2. Changing the approach to transport work. Ukraine needs to switch to paying for transport work per 1 km of run. This way, conflict situations between different social groups can be reduced, and the quality of service improved.
3. Optimization and financial planning. The next important step is cooperation with research institutes, which, based on the experience of other cities, is useful for optimizing the route network and developing a program to calculate the cost of transport work.
4. Competitive bidding and strict quality requirements. The selection of carriers should be carried out through fair and transparent procedures. During tenders, it is necessary to establish quality and social criteria for rolling stock and services. In particular, this applies to the purchase of European-style buses (with a low floor and Euro-6 environmental standards) and to indicators of schedule adherence. Also, measures to improve service quality include optimizing routes and introducing transfer tickets to create a convenient, integrated transport network.
5. Digitalization, control, and transparency. The mandatory implementation of automated fare accounting systems, GPS tracking, and dispatching will enable full accounting for each passenger and real-time flight tracking, forming a database of transport operations in cities. For operational control (for example, during air alerts), additional tools can be used, such as Chernihiv's experience in creating operational chats and a department to monitor work performance.
6. Setting up a reconciliation report system. Along with the submission of documentation, timely payment of financial compensation to carriers is another motivating factor for them. Thus, operators have assurances of cash receipts and can more comprehensively plan for the long term. This process should be based on actual budget allocations and take into account the enterprise's tax discipline.

These actions can have a qualitative impact on passenger transportation in the capital of Ukraine, bring us closer to the European level of transportation, and replenish the local budget by combating untaxed cash.

The reform is an extremely complex process that may be accompanied by resistance:

1. Misunderstanding of the reform model by military administrations, as, for example, happened in Chernihiv. The simplified perception of compensation for carriers as the purchase of cars by private enterprises creates risks of underfunding and ineffectiveness of changes.
2. Fear of criminal cases and inspections by law enforcement officers often stops mayors of other cities.
3. Another important challenge is the shortage of personnel, particularly drivers. Enterprises are allowed to book only 50% of drivers, which does not positively affect the incentive for this work.

Further exploration in this direction should focus on finding ways to address the outlined problems and on a deeper analysis of the mechanisms of transition to a model of public service obligations.

Currently, marshrutkas are an integral part of mobility in Ukrainian cities, helping fill the gap left by a shortage of buses. However, due to the preservation of outdated management models, a negative attitude among residents forms, turning disappointment into chronic despair. It is quite possible to reverse this trend. Even with private operators on the routes, the transition to PSO contracts and the introduction of clear quality standards can change passengers' perceptions, restoring trust in transportation and public transport operations in general across the country.

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ANNEXES

Annex 1.

Блок: Пасажири

- Чи почуваетесь ви в безпеці в маршрутці Чи відрізняється ваша поведінка залежно від того, хто сидить поруч?
- Опишіть ситуацію, коли ви бачите маршрутку, що під'їжджає, але вирішуєте не заходити. Що впливає на рішення?
- Якщо до зупинки одночасно під'їжджають великий автобус і маршрутка, куди ви сядете?
- Яку суму ви готові переплатити за те, щоб їхати сидячи або з кондиціонером? Де проходить ваша межа між «дорого» і «нестерпно»?
- Чи відчуваєте ви зміну свого соціального статусу, коли пересідаєте з власного авто (або таксі) у маршрутку і навпаки?
- Як часто ви просите зупинити в непередбаченому місці?
- Чи є райони, куди ви нізащо не поїдете маршрутною, навіть якщо це єдиний прямий рейс?

Блок: Водії

- Як ви відчуваєте час протягом зміни?
- Які жести або сигнали фарами ви використовуєте для спілкування з іншими водіями? Про що ви зазвичай говорите на кінцевих зупинках під час перекуру?
- Що для вас пріоритет: безпека пасажирів, комфорт чи необхідність заробити «план» для власника?
- Етика пільговиків: Як ви визначаєте, кого з пільговиків везти, а кому відмовити?
- Хто насправді платить за проїзд пенсіонерів? Як здійснюється контроль та компенсації, чи не виганяють водії пільговиків?
- Чи відчуваєте ви боротьбу з комунальним транспортом і водіями?
- Які у вас враження від роботи? Що б ви хотіли покращити?

Блок: Організатори роботи.

- Як формуються маршрути? Наскільки відповідають офіційним, а наскільки — реальним потокам людей?
- Чому місто не може замінити маршрутки великими автобусами?
- Що станеться з містом, якщо завтра всі маршрутки не вийдуть на рейс? Як ви оцінюєте ступінь залежності муніципалітету від приватних перевізників?
- Чому в маршрутках так важко впроваджується безготівкова оплата?

- Як ви контролюєте реальний виторг у системі, де більшість оплат йде готівкою в руки водію? На чому тримається довіра між вами та водієм?
- Гнучкість активу: Наскільки легко ви можете змінити маршрут або кількість машин залежно від прибутковості?
- Як ви справляєтеся з дефіцитом кадрів?
- Чому зупинки маршруток часто не облаштовані?
- Як відбувається процес перегляду ціни за проїзд?
- Хто насправді платить за проїзд пенсіонерів? Як здійснюється контроль та компенсації, чи не виганяють водії пільговиків?
- Яким ви бачите цей маршрут через 5 років?

Слова-маркери для позначення видів громадського транспорту.

Дії перед входом: чи готує людина гроші заздалегідь?

Де людина чекає — під знаком зупинки чи «вище по дорозі», щоб бути першим, хто займе вільне місце?

Як формуються черги на зупинці?